APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,579	02/06/2002	Min-Goo Kim	678-804 (P10162)	1798

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EXAMINER
TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>1</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2002*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-20* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I.   Claims 1-8, drawn to A Method of Rearranging Sub-Codes by

Rearranging Sub-Codes of a Sub-Code Set with a same or Different Code

Rate, classified in class 714, subclass 701.

II.   Claims 9-14, drawn to A Method of Generating Sub-Codes by Generating

Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with

Code Rates in an Integer-Multiple Relation and Setting the QCTC with the

Highest Code Rate as a Primitive Code, classified in class 714, subclass

786.

III.   Claims 15-17, drawn to An Apparatus for Rearranging Sub-Codes

comprising Controller for Rearranging Sub-Codes in Sub-Code Sets of

QCTCs corresponding to a Plurality of Given Code Rates and a

Puncturing and Repetition Control Signal for a Matrix following a Matrix

used for a Previous Transmission among the Rearranged Matrixes,

classified in class 714, subclass 790.

IV.   Claims 18-20, drawn to An Apparatus for Transmitting Symbols using

Sub-Codes comprising a Controller for Storing a Set of Matrixes from

which to Generate Sub-Codes of a QCTC with the Highest Code Rate

among QCTCs with Code Rates in an Integer-Multiple Relation and a

Puncturing and Repetition Control Signal according to the Selected Sub-

Code, classified in class 714, subclass 790.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I, A Method of Rearranging Sub-Codes by Rearranging Sub-

Codes of a Sub-Code Set with a same or Different Code Rate, and Group II, A Method

of Generating Sub-Codes by Generating Sub-Codes of a QCTC with the Highest Code

Rate among QCTCs with Code Rates in an Integer-Multiple Relation and Setting the

QCTC with the Highest Code Rate as a Primitive Code, are related as subcombinations

disclosed as usable together in a single combination. The subcombinations are distinct

from each other if they are shown to be separately usable. In the instant case, invention

Group I, A Method of Rearranging Sub-Codes by Rearranging Sub-Codes of a Sub-

Code Set with a same or Different Code Rate, has separate utility such as for

rearranging sub-codes by rearranging sub-codes of a sub-code set with a same or

different code rate. In the instant case, invention Group II, A Method of Generating

Sub-Codes by Generating Sub-Codes of a QCTC with the Highest Code Rate among

QCTCs with Code Rates in an Integer-Multiple Relation and Setting the QCTC with the

Highest Code Rate as a Primitive Code, has separate utility such as generating sub-

codes of a QCTC with the highest code rate among QCTCs with code rates in an

integer-multiple relation and setting the QCTC with the highest code rate as a primitive

code. See MPEP § 806.05(d).

Inventions Group I, A Method of Rearranging Sub-Codes by Rearranging Sub-

Codes of a Sub-Code Set with a same or Different Code Rate, and Group III, An

Apparatus for Rearranging Sub-Codes comprising Controller for Rearranging Sub-Codes in Sub-Code Sets of QCTCs corresponding to a Plurality of Given Code Rates and a Puncturing and Repetition Control Signal for a Matrix following a Matrix used for a Previous Transmission among the Rearranged Matrixes, are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process Group I, A Method of Rearranging Sub-Codes by Rearranging Sub-Codes of a Sub-Code Set with a same or Different Code Rate, as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus Group I, A Method of Rearranging Sub-Codes by Rearranging Sub-Codes of a Sub-Code Set with a same or Different Code Rate, as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process can be practiced in an ARQ protocol and the apparatus uses puncturing.

Inventions Group I, A Method of Rearranging Sub-Codes by Rearranging Sub-Codes of a Sub-Code Set with a same or Different Code Rate, and Group IV, An Apparatus for Transmitting Symbols using Sub-Codes comprising a Controller for Storing a Set of Matrixes from which to Generate Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and a Puncturing and Repetition Control Signal according to the Selected Sub-Code, are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions Group I is a method for rearranging sub-codes by rearranging sub-codes of a

sub-code set with a same or different code rate and Group IV is an apparatus for use with a completely different process, i.e., a method for generating sub-codes by generating sub-codes of a QCTC with the highest code rate among QCTCs with code rates in an integer-multiple relation and setting the QCTC with the highest code rate as a primitive code.

Inventions Group II, A Method of Generating Sub-Codes by Generating Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and Setting the QCTC with the Highest Code Rate as a Primitive Code, and Group III, An Apparatus for Rearranging Sub-Codes comprising Controller for Rearranging Sub-Codes in Sub-Code Sets of QCTCs corresponding to a Plurality of Given Code Rates and a Puncturing and Repetition Control Signal for a Matrix following a Matrix used for a Previous Transmission among the Rearranged Matrixes, are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions Group II is a method for generating sub-codes by generating sub-codes of a QCTC with the highest code rate among QCTCs with code rates in an integer-multiple relation and setting the QCTC with the highest code rate as a primitive code and Group III is an apparatus for use with a completely different process, i.e., a method for rearranging sub-codes by rearranging sub-codes of a sub-code set with a same or different code rate.

Inventions Group II, A Method of Generating Sub-Codes by Generating Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and Setting the QCTC with the Highest Code Rate as a Primitive Code, and Group IV, An Apparatus for Transmitting Symbols using Sub-Codes comprising a Controller for Storing a Set of Matrixes from which to Generate Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and a Puncturing and Repetition Control Signal according to the Selected Sub-Code, are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process Group II, A Method of Generating Sub-Codes by Generating Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and Setting the QCTC with the Highest Code Rate as a Primitive Code, as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus Group IV, An Apparatus for Transmitting Symbols using Sub-Codes comprising a Controller for Storing a Set of Matrixes from which to Generate Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and a Puncturing and Repetition Control Signal according to the Selected Sub-Code, as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process can be practiced in an ARQ protocol and the apparatus uses puncturing.

Inventions Group III, An Apparatus for Rearranging Sub-Codes comprising Controller for Rearranging Sub-Codes in Sub-Code Sets of QCTCs corresponding to a

Plurality of Given Code Rates and a Puncturing and Repetition Control Signal for a Matrix following a Matrix used for a Previous Transmission among the Rearranged Matrixes, and Group IV, An Apparatus for Transmitting Symbols using Sub-Codes comprising a Controller for Storing a Set of Matrixes from which to Generate Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and a Puncturing and Repetition Control Signal according to the Selected Sub-Code, are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group III, An Apparatus for Rearranging Sub-Codes comprising Controller for Rearranging Sub-Codes in Sub-Code Sets of QCTCs corresponding to a Plurality of Given Code Rates and a Puncturing and Repetition Control Signal for a Matrix following a Matrix used for a Previous Transmission among the Rearranged Matrixes, has separate utility such as for rearranging sub-codes comprising controller for rearranging sub-codes in sub-code sets of QCTCs corresponding to a plurality of given code rates. In the instant case, invention Group IV, An Apparatus for Transmitting Symbols using Sub-Codes comprising a Controller for Storing a Set of Matrixes from which to Generate Sub-Codes of a QCTC with the Highest Code Rate among QCTCs with Code Rates in an Integer-Multiple Relation and a Puncturing and Repetition Control Signal according to the Selected Sub-Code, has separate utility such as for storing a set of matrixes from which to generate sub-codes of a QCTC with the highest code rate among QCTCs with code rates in an integer-multiple relation. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for the different groups are mutually exclusive, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

A telephone call was made to Michael Musella on 02 June 2004 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).
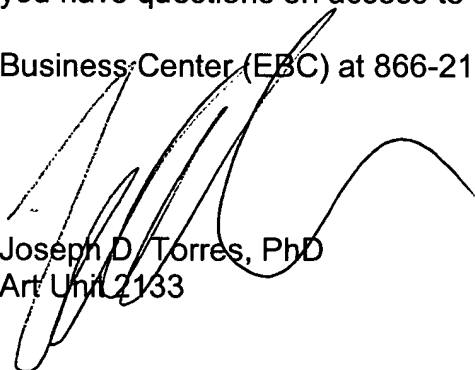
Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph D. Torres whose telephone number is (703)

308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Joseph D. Torres, PhD
Art Unit 2133